

Group Art Unit:
Examiner:

FOR: TREATMENT OF MINERAL MATERIALS

Washington, D.C. 20231

1 3/96

Please amend the above-identified patent application, without prejudice, as follows:

IN THE CLAIMS:

Amend claims 2, 3, 5-12, 15 and 18 by replacement as follows:

2. (amended) A process according to claim 1 in which the water soluble polymer is anionic and is preferably formed from ethylenically unsaturated water-soluble monomer or blend of monomers comprising ,

(a) anionic monomers selected from ethylenically unsaturated carboxylic acid and/or sulphonic acid monomers,

and optionally (b) nonionic comonomers.

3. (amended) A process according to claim 1 in which the polymeric particles have an average particles size of less than 10 microns.

5. (amended) A process according to claims 1 in which the polymeric particles are added to the material as substantially individual particles of particle size greater than 20 microns.

6. (amended) A process according to claim 1 in which the dispersed particulate solids of the material are mineral.

7. (amended) A process according to claim 1 in which the dispersed particulate solids of the material have particle sizes less than 100 microns.

8. (amended) A process according to claim 1 in which the polymer particles are in the form of an aqueous dispersion comprised of (a) a liquid dispersing medium consisting mainly of salt solution which comprises at least 25% by weight of inorganic salt based on total weight of dispersing medium; and (b) a water-soluble vinyl addition non-ionic or anionic polymer, and that is insoluble in said salt solution,
wherein said polymer is formed from ethylenically unsaturated monomers consisting of acrylic acid (or salts), optionally (meth)acrylamide and optionally at least one cross-linking monomer containing at least two polymerisable ethylenically unsaturated groups and
wherein the inorganic salt comprises a Group II metal halide.

9. (amended) A process according to claim 8 in which the group II metal halide is calcium chloride and the concentration of calcium chloride in the dispersing medium is at least 35% .

10. (amended) A process according to claim 1 in which the material has a solids content in the range 15% to 80% by weight.

11. (amended) A process according to claim 1 in which the material comprised red mud from the Bayer alumina process.

12. (amended) A process according to claim 1 in which the material is pumped to an outlet, where it is allowed to flow over the surface of previously rigidified material, wherein the material is allowed to stand and rigidify to form a stack.

15. (amended) An apparatus according to claim 13 in which the means for conveying the treated suspension from the mixing chamber includes a helical rotor pump.


18. (amended) A process according to claim 16 in which the particulate treatment chemical has a particle size of at least 20 microns.

Remarks

Upon entry of the instant Preliminary Amendment, claims 1-18 are pending. Multiple dependencies and preferred embodiments have been eliminated without prejudice to the filing of claims directed to such subject matter. The amendments are primarily a matter of form. No new matter has been added.

In view of the foregoing amendments, Applicants aver that the instant claims are now in better condition for examination on the merits. Early favorable action is respectfully solicited. If minor amendments will further prosecution, Applicants request that the Examiner contact the undersigned representative.

Respectfully submitted


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APPENDIX - MARKED UP CLAIMS

2. (amended) A process according to claim 1 in which the water soluble polymer is anionic and is preferably formed from ethylenically unsaturated water-soluble monomer or blend of monomers comprising ,

(a) anionic monomers selected from ethylenically unsaturated carboxylic acid and/or sulphonic acid monomers,

and optionally (b) nonionic comonomers, ~~preferably selected from the group consisting of (meth)acrylamide, hydroxy alkyl esters of (meth)acrylic acid and N-vinyl pyrrolidone.~~

3. (amended) A process according to claim 1 ~~and claim 2~~ in which the polymeric particles have an average particles size of less than 10 microns.

5. (amended) A process according to claims 1 ~~or claim 2~~ in which the polymeric particles are added to the material as substantially individual particles of particle size greater than 20 microns, ~~preferably greater than 50 microns.~~

6. (amended) A process according to claim 1 ~~any one of claims 1 to 5~~ in which the dispersed particulate solids of the material are mineral.

7. (amended) A process according to claim 1 ~~any one of claims 1 to 6~~ in which the dispersed particulate solids of the material have particle sizes less than 100 microns, ~~in which preferably at least 80% of the particles have sizes less than 20 microns.~~

8. (amended) A process according to claim 1 ~~claims 1 to 7~~ in which the polymer particles are in the form of an aqueous dispersion comprised of (a) a liquid dispersing medium consisting mainly of salt solution which comprises at least 25% by weight of inorganic salt based on total weight of dispersing medium; and (b) a water-soluble vinyl addition non-ionic or anionic polymer, and that is insoluble in said salt solution, wherein said polymer is formed from ethylenically unsaturated monomers consisting of acrylic acid (or salts), optionally (meth)acrylamide and optionally at least one cross-linking monomer containing at least two polymerisable ethylenically unsaturated groups and wherein the inorganic salt comprises a Group II metal halide.

9. (amended) A process according to claim 8 in which the group II metal halide is calcium chloride and the concentration of calcium chloride in the dispersing medium is at least 35%; preferably around 39%.

10. (amended) A process according to claim 1 ~~any one of claims 1 to 9~~ in which the material has a solids content in the range 15% to 80% by weight, ~~preferably in the range 40% or 50% to 70% by weight, more preferably 55% to 65% by weight.~~

11. (amended) A process according to claim 1 ~~any one of claims 1 to 10~~ in which the material comprised red mud from the Bayer alumina process.

12. (amended) A process according to claim 1 ~~any one of claims 1 to 11~~ in which the material is pumped to an outlet, where it is allowed to flow over the surface of previously rigidified material, wherein the material is allowed to stand and rigidify to form a stack.

15. (amended) An apparatus according to claim 13 ~~or claim 14~~ in which the means for conveying the treated suspension from the mixing chamber includes a helical rotor pump.

18. (amended) A process according to claim 16 ~~or claim 17~~ in which the particulate treatment chemical has a particle size of at least 20 microns, ~~preferably at least 50 microns.~~